

**ATTORNEY DOCKET: PD-02W202
PATENT****REMARKS**

Claims 1 – 9 and 12 – 57 are presently pending. In the above-identified Office Action, the Examiner rejected Claims 1, 4, 8 and 12 under 35 U.S.C. § 102(b) as being anticipated by Kubota et al. ('893). Claims 1, 2, 4, 7 and 13 – 15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kornine (US 2005/0078714). Claim 1 is rejected under 35 U.S.C. § 102(b) as being anticipated by Telfair et al. ('102). Claim 29 is rejected under 35 U.S.C. § 102(b) as being anticipated by Cloonan et al. ('978). Claims 2, 3, 13 – 15, 46 and 57 are rejected under 35 U.S.C. § 103(a) as being obvious over Telfair et al. ('102). Claims 16 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and further in view of Leonberger et al ('576). Claims 18 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and further in view of Cloonan et al ('978). Claims 20 – 22, 24, and 26 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and Cloonan et al. ('978) and further in view of Brauch et al ('278). Claim 28 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and Cloonan et al. ('978) and Brauch et al ('278) and further in view of Spariosu. Claim 27 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and Cloonan et al. ('978) and Brauch et al ('278) and further in view of Wolak et al. (US 2002/0159489). Claim 25 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and Cloonan et al. ('978) and Brauch et al ('278) and further in view of Gordon ('132). Claim 29 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) in view of Cloonan et al. ('978). Claims 30, 31, 37, 38, 41 – 44, and 47 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and Cloonan et al. ('978) and further in view of Leonberger et al ('576). Claim 36 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and Cloonan et al. ('978) and Leonberger et al ('576) and further in view of Spariosu. Claim 40 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and Cloonan et al. ('978) and Leonberger et al ('576) and further in view of Wolak et al. (US 2002/0159489). Claim 39 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair et al. ('102) and Cloonan et al. ('978) and Leonberger et al ('576) and further in view of Gordon ('132).

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Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) in view of Gordon ('132). Claim 9 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) in view of Cloonan *et al.* ('978). Claims 13 – 15 and 46 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) in view of Telfair *et al.* ('102). Claims 18 and 19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) and Telfair *et al.* ('102) and further in view of Cloonan *et al.* ('978).

Claims 20 - 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Telfair *et al.* ('102) and Kubota *et al.* ('893) and Cloonan *et al.* ('978) and further in view of Brauch *et al.* ('278). Claims 29, 52 – 54 and 56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) in view of Cloonan *et al.* ('978). Claims 30, 41 and 42 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) and Cloonan *et al.* ('978) and further in view of Leonberger *et al.* ('576). Claims 31 – 33, 43, 44, 47 and 48 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) and Cloonan *et al.* ('978) and Leonberger *et al.* ('576) and further in view of Telfair *et al.* ('102). Claims 45 and 49 – 51 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) and Telfair *et al.* ('102) and Cloonan *et al.* ('978) and Leonberger *et al.* ('576) and further in view of Brauch *et al.* ('278). Claims 52 – 54 and 56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) in view of Cloonan *et al.* ('978). Claims 54 – 55 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kubota *et al.* ('893) and Cloonan *et al.* ('978) and further in view of Ueda *et al.*

Claims 34 and 35 are rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

By this response, Applicants have amended the limitations of Claim 4 into Claims 1, 13, 46, 52 and 57. Claims 8 and 34 have been corrected per the objections of the Examiner. In addition, an Affidavit under 37 CFR § 1.131 is provided to establish a date of invention that precedes the effective date of the Komine reference.

For the reasons set forth more fully below, the Application is deemed to properly present claims patentable over the prior art. Accordingly, reconsideration, allowance and

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passage to issue are respectfully requested.

The present invention addresses the need in the art for an eye-safe, high-quality, robust, cost-effective, compact, and light-weight laser that is readily scalable to high average power and high pulse energy and for a unique phase-locking system that can efficiently combine arbitrary numbers of fiber laser oscillator outputs without requiring precise fiber length equalization or stringent periodic positioning.

The need in the art is addressed by the inventive laser which includes plural fiber laser oscillators, high-power laser pump sources coupled to said fiber laser resonators, and a cavity external to the fiber laser oscillators coherently combines plural laser beams output from the plural fiber laser oscillators into a single output laser beam. The invention is set forth in Claims of varying scope of which Claim 1 as amended is illustrative. Claim 1 now recites:

1. A robust scalable laser system comprising:
plural laser resonators;
a high-power laser pump source coupled to each of said fiber laser resonators; and
a cavity external to said laser resonators, said cavity adapted to combine plural laser beams output from said plural laser resonators into a single output laser beam. (Emphasis added.)

None of the references, taken alone or in combination, teach, disclose or suggest the invention as presently claimed. That is, none of the references, taken alone or in combination, teach, disclose or suggest a laser system having plural fiber laser resonators, high power pump sources coupled to the fiber laser resonators and an external cavity for combining the outputs thereof into a single output beam.

Claims 1–3, 5–9, 12–28, and 46–57 now include the limitation of Claim 4. In the above-identified Office Action, Claim 4 was rejected under 35 U.S.C. § 102(b) as being anticipated by Kubota and Komine. Contrary to the assertions of the Examiner Kubota does not teach the use of plural laser resonators. Indeed, only a single laser resonator is shown and the resonator is not a fiber resonator as presently claimed.

As to Komine, the enclosed Affidavit establishes a date of the present invention that precedes the effective date Komine. Hence, Claims 1–3, 5–9, 12–28, and 46–57 should now be allowable.

Claims 29–45 were rejected with primary reliance on Cloonan *et al.* The Examiner

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suggests that Cloonan teaches means for providing flat-top beams. However, no such disclosure is found in Cloonan. Accordingly, Claims 29 – 45 should be allowable as well.

Accordingly, reconsideration, allowance and passage to issue are respectfully requested.

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The outstanding objections and rejections have been addressed, and the Application is in condition for allowance. Such favorable reconsideration is solicited.

An Affidavit Under Rule 1.131 is submitted herewith to establish a date of invention that pre-dates October 8, 2003, the effective date of Komine US 2005/0078714. Reconsideration, allowance and passage to issue are respectfully requested.

The Director is hereby authorized to charge the required fee(s), if any, or credit any overpayment to Deposit Account Number 50-0616.

Respectfully submitted,
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